

APPENDIX A

NCDOT Contacts

Resources & Contacts

North Carolina Department of Transportation

Customer Service Office

1-877-DOT4YOU
(1-877-368-4968)

Secretary of Transportation

1501 Mail Service Center
Raleigh, NC 27699-1501
(919) 733-2520

Board of Transportation Member

Contact information for the current Board of Transportation Member for your area may be accessed from the NCDOT homepage on the worldwide web (<http://www.ncdot.org/board/>) or by calling toll free 1-877-DOT4YOU.

Highway Division 10

- **Division Engineer**

Contact the Division Engineer with general questions concerning NCDOT activities within Division 10 or information on Small Urban Funds.

716 West Main St.
Albemarle, NC 28001
(704) 982-0101

- **Division Construction Engineer**

Contact the Division Construction Engineer for information concerning major roadway improvements under construction.

716 West Main St.
Albemarle, NC 28001
(704) 982-0101

- **Division Traffic Engineer**

Contact the Division Traffic Engineer for information concerning high-crash locations.

716 West Main St.
Albemarle, NC 28001
(704) 982-0101

- **District Engineer**

Contact the District Engineer for information regarding Driveway Permits, Right of Way Encroachments, and Development Reviews.

615 Concord Rd.
Albemarle, NC 28001
(704) 982-0104

- **County Maintenance Engineer**

Contact the County Maintenance Engineer regarding any maintenance activities, such as drainage adjacent to state roadways.

913 Coble Avenue
Albemarle, NC 28001
(704) 983-5146

Centralized Personnel

- **Transportation Planning Branch**
Contact the Transportation Planning Branch with long-range planning questions.
1554 Mail Service Center
Raleigh, NC 27699-1554
(919) 715-5737
- **Secondary Roads Office**
Contact the Secondary Roads Officer for information regarding the Industrial Access Funds Program or paving of secondary roads.
1535 Mail Service Center
Raleigh, NC 27699-1535
(919) 733-3250
- **Program Development Branch**
Contact the Program Development Branch for information concerning Roadway Official Corridor Maps and the Transportation Improvement Program (TIP).
1542 Mail Service Center
Raleigh, NC 27699-1542
(919) 733-2031
- **Project Development & Environmental Analysis Branch**
Contact PDEA for information on environmental studies for projects that are included in the TIP.
1548 Mail Service Center
Raleigh, NC 27699-1548
(919) 733-3141
- **Traffic Engineering & Safety Systems Branch**
Contact the Traffic Engineering & Safety Systems Branch for information regarding Development Reviews and signal issues.
1561 Mail Service Center
Raleigh, 27699-1561
(919) 733-3915
- **Highway Design Branch**
Contact the Highway Design Branch for information regarding alignments for projects that are included in the TIP.
1584 Mail Service Center
Raleigh, 27699-1584
(919) 250-4001
- **Bicycle and Pedestrian Division**
Contact the Bicycle and Pedestrian Division for information regarding projects in the TIP, funding, and events.
1552 Mail Service Center
Raleigh, 27699-1552
(919) 733-2804
- **Public Transportation Division**
Contact the Public Transportation Division for information regarding planning and funding for public transportation projects.
1550 Mail Service Center
Raleigh, 27699-1550
(919) 733-4713
- **Railroad Division**
Contact the Railroad Division for information regarding engineering and safety, operations, and planning.
1553 Mail Service Center
Raleigh, 27699-1553
(919) 733-7245
- **Other departments**
Contact information for other departments within the NCDOT not listed here are available at the NCDOT homepage on the worldwide web (<http://www.ncdot.org/>) or by calling 1-877-DOT4YOU.

APPENDIX B

Definitions of Comprehensive Transportation Plan Categories

Definitions for CTP Maps

Highway Map

- Freeways¹
 - Functional purpose – high mobility, high volume, high speed
 - Posted speed – 55 mph or greater
 - Cross section – minimum four lanes with continuous median
 - Multi-modal elements – High Occupancy Vehicles (HOV)/High Occupancy Transit (HOT) lanes, busways, truck lanes, park-and-ride facilities at/near interchanges, adjacent shared use paths (separate from roadway and outside ROW)
 - Type of access control – full control of access
 - Access management – interchange spacing (urban – one mile; non-urban – three miles); at interchanges on the intersecting roadway, full control of access for 1,000' or for 350' plus 650' island or median; use of frontage roads, rear service roads
 - Intersecting facilities – interchange or grade separation (no signals or at-grade intersections)
 - Driveways – not allowed
- Expressways¹
 - Functional purpose – high mobility, high volume, medium-high speed
 - Posted speed – 45 to 60 mph
 - Cross section – minimum four lanes with median
 - Multi-modal elements – HOV lanes, busways, very wide paved shoulders (rural), shared use paths (separate from roadway but within ROW)
 - Type of access control – limited or partial control of access;
 - Access management – minimum interchange/intersection spacing 2,000 feet; median breaks only at intersections with minor roadways or to permit U-turns; use of frontage roads, rear service roads; driveways limited in location and number; use of acceleration/deceleration or right turning lanes
 - Intersecting facilities – interchange; at-grade intersection for minor roadways; right-in/right-out and/or left-over or grade separation (no signalization for through traffic)
 - Driveways – right-in/right-out only; direct driveway access via service roads or other alternate connections
- Boulevards
 - Functional purpose – moderate mobility; moderate access, moderate volume, medium speed
 - Posted speed – 30 to 55 mph
 - Cross section – two or more lanes with median (median breaks allowed for U-turns per current NCDOT *Driveway Manual*)
 - Multi-modal elements – bus stops, bike lanes (urban) or wide paved shoulders (rural), sidewalks (urban - local government option)
 - Type of access control – limited control of access, partial control of access, or no control of access
 - Access management – two lane facilities may have medians with crossovers, medians with turning pockets or turning lanes; use of acceleration/deceleration or right turning lanes is optional; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged

- Intersecting facilities – at grade intersections and driveways; interchanges at special locations with high volumes
- Driveways – primarily right-in/right-out, some right-in/right-out in combination with median leftovers; major driveways may be full movement when access is not possible using an alternate roadway
- ❑ Other Major Thoroughfares
 - Functional purpose – balanced mobility and access, moderate volume, low to medium speed
 - Posted speed – 25 to 55 mph
 - Cross section – four or more lanes without median
 - Multi-modal elements – bus stops, bike lanes/wide outer lane (urban) or wide paved shoulder (rural), sidewalks (urban)
 - Type of access control – no control of access
 - Access management – continuous left turn lanes; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged
 - Intersecting facilities – intersections and driveways
 - Driveways – full movement on two lane roadway with center turn lane as permitted by the current NCDOT *Driveway Manual*
- ❑ Minor Thoroughfares
 - Functional purpose – balanced mobility and access, moderate volume, low to medium speed
 - Posted speed – 25 to 45 mph
 - Cross section – ultimately three lanes (no more than one lane per direction) or less without median
 - Multi-modal elements – bus stops, bike lanes/wide outer lane (urban) or wide paved shoulder (rural), sidewalks (urban)
 - ROW – no control of access
 - Access management – continuous left turn lanes; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged
 - Intersecting facilities – intersections and driveways
 - Driveways – full movement on two lane with center turn lane as permitted by the current NCDOT *Driveway Manual*
- ❑ Existing – Roadway facilities that are not recommended to be improved.
- ❑ Needs Improvement – Roadway facilities that need to be improved for capacity, safety, or system continuity. The improvement to the facility may be widening, other operational strategies, increasing the level of access control along the facility, or a combination of improvements and strategies. **“Needs improvement” does not refer to the maintenance needs of existing facilities.**
- ❑ Recommended – Roadway facilities on new location that are needed in the future.
- ❑ Interchange – Through movement on intersecting roads is separated by a structure. Turning movement area accommodated by on/off ramps and loops.
- ❑ Grade Separation – Through movement on intersecting roads is separated by a structure. There is no direct access between the facilities.
- ❑ Full Control of Access – Connections to a facility provided only via ramps at interchanges. No private driveway connections allowed.
- ❑ Limited Control of Access – Connections to a facility provided only via ramps at interchanges (major crossings) and at-grade intersections (minor crossings and service roads). No private driveway connections allowed.

- ❑ Partial Control of Access – Connections to a facility provided via ramps at interchanges, at-grade intersections, and private driveways. Private driveway connections shall be defined as a maximum of one connection per parcel. One connection is defined as one ingress and one egress point. These may be combined to form a two-way driveway (most common) or separated to allow for better traffic flow through the parcel. The use of shared or consolidated connections is highly encouraged.
- ❑ No Control of Access – Connections to a facility provided via ramps at interchanges, at-grade intersections, and private driveways.

Public Transportation and Rail Map

- ❑ Bus Routes – The primary fixed route bus system for the area. Does not include demand response systems.
- ❑ Fixed Guideway – Any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. The term includes heavy rail, commuter rail, light rail, monorail, trolleybus, aerial tramway, included plane, cable car, automated guideway transit, and ferryboats.
- ❑ Operational Strategies – Plans geared toward the non-single occupant vehicle. This includes but is not limited to HOV lanes or express bus service.
- ❑ Rail Corridor – Locations of railroad tracks that are either active or inactive tracks. These tracks were used for either freight or passenger service.
 - Active – rail service is currently provided in the corridor; may include freight and/or passenger service
 - Inactive – right of way exists; however, there is no service currently provided; tracks may or may not exist
 - Recommended – It is desirable for future rail to be considered to serve an area.
- ❑ High Speed Rail Corridor – Corridor designated by the U.S. Department of Transportation as a potential high speed rail corridor.
 - Existing – Corridor where high speed rail service is provided (there are currently no existing high speed corridor in North Carolina).
 - Recommended – Proposed corridor for high speed rail service.
- ❑ Rail Stop – A railroad station or stop along the railroad tracks.
- ❑ Intermodal Connector – A location where more than one mode of public transportation meet such as where light rail and a bus route come together in one location or a bus station.
- ❑ Park and Ride Lot – A strategically located parking lot that is free of charge to anyone who parks a vehicle and commutes by transit or in a carpool.

Bicycle Map

- ❑ On Road-Existing – Conditions for bicycling on the highway facility are adequate to safely accommodate cyclists.
- ❑ On Road-Needs Improvement – At the systems level, it is desirable for the highway facility to accommodate bicycle transportation; however, highway improvements are necessary to create safe travel conditions for the cyclists.
- ❑ On Road-Recommended – At the systems level, it is desirable for a recommended highway facility to accommodate bicycle transportation. The highway should be designed and built to safely accommodate cyclists.
- ❑ Off Road-Existing – A facility that accommodates bicycle transportation (may also accommodate pedestrians, eg. greenways) and is physically separated from a highway facility usually on a separate right-of-way.

- ❑ Off Road-Needs Improvement – A facility that accommodates bicycle transportation (may also accommodate pedestrians, eg. greenways) and is physically separated from a highway facility usually on a separate right-of-way that will not adequately serve future bicycle needs. Improvements may include but are not limited to: widening, paving (not re-paving), improved horizontal or vertical alignment.
- ❑ Off Road-Recommended – A facility needed to accommodate bicycle transportation (may also accommodate pedestrians, eg. greenways) and is physically separated from a highway facility usually on a separate right-of-way. This may also include greenway segments that do not necessarily serve a transportation function but intersect recommended facilities on the highway map or public transportation and rail map.



Pedestrian Map

Format for the pedestrian map is under development.

¹Every effort will be made to ensure that all Tier 1 (Statewide importance) facilities on the NCMIN (North Carolina Multimodal Investment Network) will be Freeway or Expressway on the Comprehensive Transportation Plan

APPENDIX C

Comprehensive Transportation Plan Tabulations & Recommendations


Highway														
Facility & Segment From		To	Distance (mi)	Cross-Section (ft)	lanes	ROW (ft)	Existing System		Proposed System					Other Maps
							Speed (mph)	Capacity (vpd)	2002 ADT	Capacity (vpd)	2030 ADT	Cross- Section	ROW (ft)	
NC 24-27														
Robinson Road (SR 1146)	Stanly County Line	1.52	48	4	200	55	54,100	11,500	51,400	23,000	ADQ	ADQ		
Stanly County Line	Locust Western City Limits	0.15	48	4	200	55	54,100	11,500	51,400	23,000	ADQ	ADQ		
Locust Western City Limits	Browns Hill Road (SR 1142)	0.21	48	4	200	35	54,100	11,500	51,400	23,000	ADQ	ADQ		
Browns Hill Road (SR 1142)	Renee Ford Road (SR 1140)	0.13	60	2	100	35	13,900	14,600	13,900	43,200	ADQ	ADQ		
Renee Ford Road (SR 1140)	Simpson Road	0.03	30	2	60	35	13,900	14,600	13,900	43,200	ADQ	ADQ		
Simpson Road	NC 200	1.15	34	3	60	35	13,900	16,700	13,900	43,200	ADQ	ADQ		
NC 200	Running Church Creek Road (SR 1134)	3.57	29	2	60	55	13,900	13,500	13,900	31,000	ADQ	ADQ		
NC 200														
Buster Road (SR 1118)	Stanfield Southern Town Limits	4.65	22	2	100	55	12,500	2,000	12,500	4,300	F	94		
Stanfield Southern Town Limits	Stanfield Southern Town Limits	0.07	22	2	60	55	12,500	2,000	12,500	4,300	F	94		
Stanfield Southern Town Limits	Coyle Road (SR 1127)	0.21	22	2	60	35	12,500	2,000	12,500	4,300	F	94		
Coyle Road (SR 1127)	Big Lick Road (SR 1130)	1.38	32	2	60	45	11,100	3,100	11,100	8,400	F	94		
Big Lick Road (SR 1130)	Loves Chapel Road (SR 1001)	0.10	32	2	60	55	11,100	3,200	11,100	6,400	F	94		
Loves Chapel Road (SR 1001)	Elm Street (SR 1137)	0.17	24	2	100	35	11,100	7,000	11,100	22,600	F	94		
Elm Street (SR 1137)	NC 24-27	0.17	40	2	100	35	11,100	7,000	11,100	24,800	F	94		
NC 24-27	Dixon Road	0.17	40	2	100	35	11,100	6,100	11,100	23,100	F	94		
Dixon Road	Danita Drive (SR 1204)	0.23	24	2	100	35	11,100	4,600	11,100	23,100	F	94		
Danita Drive (SR 1204)	Locust Northern City Limits	1.59	26	2	100	35	11,100	4,600	11,100	16,000	F	94		
Locust Northern City Limits	Cabarrus County Line	0.46	26	2	100	55	13,800	5,200	13,800	14,000	F	94		
Loves Mill Road (SR 1001)														
Union County Line	Stanfield Town Limits	0.39	20	2	N/A	55	11,100	1,500	11,100	4,900	K	70		
Stanfield Town Limits	River Road (SR 1145)	0.47	40	2	N/A	35	11,100	2,900	11,100	8,322	K	70		
Big Lick Road (SR 1130)														
Oak Grove Road (SR 1115)	West of Coyle Road (SR 1127)	1.65	18	2	N/A	55	12,000	2,100	12,000	4,500	K	70		
West of Coyle Road (SR 1127)	NC 200	1.75	18	2	N/A	35	12,000	1,500	12,000	4,500	K	70		


The Other Maps column means that these facilities are included on other Comprehensive Transportation Plan elements and these elements should be reviewed.


Highway  Public Transportation and Rail  Bicycle  Pedestrian 


Highway													
Facility & Segment From		To	Distance (mi)	Cross-Section (ft)	lanes	ROW (ft)	Existing System		Proposed System				
							Speed (mph)	Capacity (vpd)	2002 ADT	Capacity (vpd)	2030 ADT	Cross- Section	ROW (ft)
Elm Street (SR 1137)													
NC 200	Locust City Limits	0.59	18	2	N/A	35	12,500	1,500	12,500	4,600	K	70	
Locust City Limits	Big Lick Road (SR 1130)	1.00	18	2	N/A	55	12,500	1,500	12,500	4,600	K	70	
Renee Ford Road (SR 1140)													🚲
NC 24-27	Locust City Limits	0.98	18	2	60	35	12,000	3,300	12,000	11,800	K	70	
Locust City Limits	Stanfield Town Limits	0.72	18	2	60	45	12,000	2,800	12,000	8,500	K	70	
Stanfield Town Limits	Planning Area Boundary	0.06	18	2	60	55	12,000	2,800	12,000	8,500	K	70	
Stanly Street (SR 1144)													🚲
Renee Ford Road (SR 1140)	East Prong Rock Hole Creek	0.90	20	2	N/A	35	12,000	1,700	12,000	5,100	K	70	
East Prong Rock Hole Creek	Loves Mill Road (SR 1001)	0.34	24	2	N/A	35	12,500	1,700	12,500	5,100	K	70	
Meadow Creek Church/ Bethel Church Road (SR 1200)													🚲
NC 24-27	Locust Southern City Limits	0.54	20	2	N/A	35	12,000	2,000	12,000	6,300	K	70	
Locust Southern City Limits	Locust City Limits	0.48	20	2	N/A	55	12,000	1,500	12,000	6,300	K	70	
Locust City Limits	Locust City Limits	0.56	20	2	N/A	35	12,000	1,100	12,000	6,300	K	70	
Locust City Limits	Locust Eastern City Limits	0.72	20	2	N/A	55	12,000	900	12,000	3,200	K	70	
Locust Eastern City Limits	E Christy Lane	0.37	20	2	N/A	35	12,000	2,800	12,000	3,200	K	70	
E Christy Lane	W Quail Run	0.19	17	2	N/A	35	12,000	2,800	12,000	7,600	K	70	
W Quail Run	NC 24-27	3.38	17	2	N/A	55	12,000	1,800	12,000	5,500	K	70	
Coley Store Road (SR 1211)													
Pond Road (SR 1210)	Bethel Church Road (SR 1200)	2.82	18	2	N/A	55	12,500	1,200	12,500	8,200	K	70	
Bethel Church Road (SR 1200)	NC 24-27	1.30	18	2	N/A	55	12,500	1,700	12,500	8,200	K	70	
Oak Grove Road (SR 1115)													
Greene Road (SR 1132)	Griffin-Greene Road (SR 1117)	1.00	20	2	60	55	12,500	900	12,500	1,100	K	70	
Griffin-Greene Road (SR 1117)	NC 200	0.14	18	2	60	55	12,500	900	12,500	1,400	K	70	
NC 200	Rushing Road (SR 1124)	2.90	20	2	60	55	12,500	700	12,500	1,300	K	70	
Rushing Road (SR 1124)	Loves Mill Road (SR 1001)	0.76	-	-	-	-	-	-	12,500	1,300	K	70	

The Other Maps column means that these facilities are included on other Comprehensive Transportation Plan elements and these elements should be reviewed.


Highway 

Public Transportation and Rail 





Bicycle 

Pedestrian 

Highway													
Facility & Segment FromTo		Distance (mi)	Cross-Section (ft)lanes		ROW (ft)	Existing System		Proposed System					
						Speed Limit (mph)	Capacity (vpd)	2002 ADT	Capacity (vpd)	2030 ADT	Cross- Section	ROW (ft)	Other Maps
Browns Hill Road (SR 1142)													
NC 24-27	Locust City Limits	0.25	18	2	60	35	12,000	700	12,000	4,100	K	70	
Locust City Limits	Stanfield Town Limits	0.90	18	2	60	55	12,000	700	12,000	4,100	K	70	
Stanfield Town Limits	Nance Road (SR 1143)	0.55	18	2	60	35	12,000	700	12,000	4,100	K	70	
Browns Hill Road Extension (SR 1142)													
NC 24-27	Browns Hill Road (SR 1142)	0.55	-	-	-	-	-	-	17,300	4,109	K	70	
Reed Mine Trail													
Meadow Church Creek Road	Reed Mine Trail Extension	0.21	-	-	-	-	-	-	17,300	4,300	K	70	
Reed Mine Trail Extension	Scout Road Extension	0.86	-	-	-	-	-	-	17,300	4,300	K	70	
Scout Road Extension	NC 24-27	0.43	-	-	-	-	-	-	17,300	4,300	K	70	





Public Transportation and Rail											
Facility and Segment		Class	Speed Limit	Distance	Existing System			Proposed System			Other
					Type	ROW	Trains	Type	ROW	Trains	
From	To		(mph)	(mi)		(ft)	per day		(ft)	per day	Maps
Aberdeen Carolina and Western											
Island Creek (SR 1129)	Coyle Road (SR 1127)	II	25	0.20	Freight	100	1	Freight	100	1	
Coyle Road (SR 1127)	Stanly Street (NC 200)	II	25	1.40	Freight	100	1	Freight	100	1	
Stanly Street (NC 200)	Locust Avenue	II	25	0.20	Freight	100	1	Freight	100	1	
Locust Avenue	Loves Chapel Road (SR 1001)	II	25	0.20	Freight	100	1	Freight	100	1	
Loves Chapel Road (SR 1001)	Pine Bluff Road (SR 1146)	II	25	2.90	Freight	100	1	Freight	100	1	

The Other Maps column means that these facilities are included on other Comprehensive Transportation Plan elements and these elements should be reviewed.


Highway  Public Transportation and Rail  Bicycle  Pedestrian 

Class I railroads are railroads whose annual income is more than \$266.7 million, while Class II railroads are railroads whose annual income is less than \$266.7 million.

Bicycle and Pedestrian

Facility and Segment		Distance (mi)	Existing System Cross-Section (ft) lanes		Proposed System Type Cross-Section		Other Maps
From	To						
Big Lick Road (SR 1130)							
Oak Grove Road (SR 1115)	West of Coyle Road (SR 1127)	1.65	18	2	On-road	B-4	
West of Coyle Road (SR 1127)	NC 200	1.75	18	2	On-road	B-4	
Renee Ford Road (SR 1140)							
NC 24-27	Locust City Limits	0.98	18	2	On-road	B-4	
Locust City Limits	Stanfield Town Limits	0.72	18	2	On-road	B-4	
Stanfield Town Limits	Planning Area Boundary	0.06	18	2	On-road	B-4	
Stanly Street (SR 1144)							
Renee Ford Road (SR 1140)	East Prong Rock Hole Ceeek	0.90	20	2	On-road	B-4	
East Prong Rock Hole Ceeek	Loves Mill Road (SR 1001)	0.34	24	2	On-road	B-4	
Meadow Creek Church/ Bethel Church Road (SR 1200)							
NC 24-27	Locust Southern City Limits	0.54	20	2	On-road	B-4	
Locust Southern City Limits	Locust City Limits	0.48	20	2	On-road	B-4	
Locust City Limits	Locust City Limits	0.56	20	2	On-road	B-4	
Locust City Limits	Locust Eastern City Limits	0.72	20	2	On-road	B-4	
Locust Eastern City Limits	E Christy Lane	0.37	20	2	On-road	B-4	
E Christy Lane	W Quail Run	0.19	17	2	On-road	B-4	
W Quail Run	NC 24-27	3.38	17	2	On-road	B-4	
Easement Facility							
Portion A							
Meadow Creek Church Road	Smith Street	0.65	-	-	Off-road	B-5	
Portion B							
Pineridge Street	NC 24-27	1.15	-	-	Off-road	B-5	

The Other Maps column means that these facilities are included on other Comprehensive Transportation Plan elements and these elements should be reviewed.



Highway 

Public Transportation and Rail 


Bicycle 


Pedestrian 

Bicycle and Pedestrian

Facility and Segment From To		Distance (mi)	Existing System Cross-Section (ft) lanes		Proposed System Type Cross-Section		Other Maps
Rock Hole Creek Facility							
Railroad Avenue	River Road (SR 1145)	0.76	-	-	Off-road	B-5	
River Road (SR 1145)	Polk Ford Road (SR 1147)	0.55	-	-	Off-road	B-5	
Polk Ford Road (SR 1147)	River Road (SR 1145)	0.82	-	-	Off-road	B-5	
River Road (SR 1145)	Railroad	0.39	-	-	Off-road	B-5	
Railroad	Railroad Avenue	1.23	-	-	Off-road	B-5	
Simpson Road Facility							
Portion A							
Simpson Road	Redah Road	0.52	-	-	Off-road	B-5	
Portion B							
Portion A	Willow Creek Road	0.18	-	-	Off-road	B-5	
Park and Ride Path							
NC 24-27	Proposed Park and Ride Lot	0.07	-	-	Off-road	B-5	
Proposed Park and Ride Lot	Meadow Creek Church Road (SR 1200)	0.40	-	-	Off-road	B-5	
Loves Mill Road (SR 1001)							
Union County Line	Stanfield Town Limits	0.39	20	2	Pedestrian		
Stanfield Town Limits	River Road (SR 1145)	0.47	40	2	Pedestrian		

The Other Maps column means that these facilities are included on other Comprehensive Transportation Plan elements and these elements should be reviewed.

Highway 

Public Transportation and Rail 

Bicycle 

Pedestrian 

APPENDIX D

Typical Comprehensive Transportation Plan Cross-Sections

Typical Transportation Cross Sections

Cross section requirements for roadways vary according to the capacity and level of service to be provided. Universal standards in the design of roadways are not practical. Each roadway section must be individually analyzed and its cross section determined based on the volume and type of projected traffic, existing capacity, desired level of service, and available right-of-way. The cross sections are typical for facilities on new location and where right-of-way constraints are not critical. For widening projects and urban projects with limited right-of-way, special cross sections should be developed that meet the needs of the project.

On all existing and proposed roadways delineated on the comprehensive transportation plan, adequate right-of-way should be protected or acquired for the recommended cross sections. In addition to cross section and right-of-way recommendations for improvements, **Appendix D** may recommend ultimate needed right-of-way for the following situations:

- roadways which may require widening after the current planning period,
- roadways which are borderline adequate and accelerated traffic growth could render them deficient, and
- roadways where an urban curb and gutter cross section may be locally desirable because of urban development or redevelopment.

Recommended design standards relating to grades, sight distances, degree of curve, superelevation, and other considerations for roadways are given in **Appendix D**. The typical cross sections are described below and are shown on **pages D-5 – D-7**.

A: Four Lanes Divided with Median

Cross section "A" is recommended for freeways/expressways in rural areas. The minimum median width for this cross section is 46 feet, but a wider median is desirable. This cross section could apply to freeways or expressways.

B: Seven Lanes - Curb & Gutter

Cross section "B" is typically not recommended for new projects. When the conditions warrant six lanes, cross section "D" should be recommended. Cross section "B" should be used only in special situations such as when widening from a five-lane section where right-of-way is limited. Even in these situations, consideration should be given to converting the center turn lane to a median so that cross section "D" is the final cross section. This cross section applies to other major thoroughfares.

C: Five Lanes - Curb & Gutter

Typical for other major thoroughfares, cross section "C" is desirable where frequent left turns are anticipated as a result of abutting development or frequent street intersections.

D: Six Lanes Divided with Raised Median - Curb & Gutter**E: Four Lanes Divided with Raised Median - Curb and Gutter**

Cross sections "D" and "E" are typically used on expressways/boulevards where left turns and intersecting streets are not as frequent. Left turns would be restricted to a few selected intersections. The 16-ft median is the minimum recommended for an urban boulevard-type cross section. In most instances, monolithic construction should be utilized due to greater cost effectiveness, ease and speed of placement, and reduced future maintenance requirements. In certain cases, grass or landscaped medians result in greatly increased maintenance costs and an increase danger to maintenance personnel. Non-monolithic medians should only be recommended when the above concerns are addressed.

F: Four Lanes Divided – Grass Median

Cross section "F" is typically recommended for expressways/boulevards to enhance the urban environment and to improve the compatibility of expressways/boulevards with residential areas. A minimum median width of 24 ft is recommended, with 30 ft being desirable.

G: Four Lanes - Curb and Gutter

Cross section "G" is recommended for other major thoroughfares where projected travel indicates a need for four travel lanes but traffic is not excessively high, left turning movements are light, and right-of-way is restricted. An additional left turn lane would likely be required at major intersections. This cross section should be used only if the above criteria are met. If right-of-way is not restricted, future strip development could take place and the inner lanes could become de facto left turn lanes.

H: Three Lanes - Curb and Gutter

In urban environments, minor thoroughfares that are proposed to function as one-way traffic carriers would typically require cross section "H".

I: Two Lanes – Curb and Gutter, Parking both sides**J: Two Lanes – Curb and Gutter, Parking one side**

Cross section "I" and "J" are usually recommended for urban minor thoroughfares since these facilities usually serve both land service and traffic service functions. Cross-section "I" would be used on those minor thoroughfares where parking on both sides is needed as a result of more intense development.

K: Two Lanes - Paved Shoulder

Cross section "K" is used in rural areas or for staged construction of a wider multilane cross section. On some minor thoroughfares or US/NC routes, projected traffic volumes may indicate that two travel lanes will adequately serve travel for a considerable period of time. For areas that are growing and that will require future widening, the full right-of-way of 100 ft should be required. In some instances, local ordinances may not allow the full 100 ft. In those cases, 70 ft should be preserved with the understanding that the full 70 ft will be preserved by use of building setbacks and future street line ordinances.

L: Six Lanes Divided with Grass Median

Cross section "L" is typical for controlled access freeways/expressways. The 46-ft grass median is the minimum desirable width, but variation from this may be permissible depending upon design considerations. Right-of-way requirements are typically 228 ft or greater, depending upon cut and fill requirements.

M: Eight Lanes Divided with Raised Median - Curb and Gutter

Also used for controlled access freeways, cross section "M" may be recommended for expressway/boulevard going through major urban areas or for routes projected to carry very high volumes of traffic.

Bicycle Cross Sections

Cross sections B-1, B-2, B-3, B-4, and B-5 are typical bicycle cross sections. Contact the NCDOT Division of Bicycle and Pedestrian Transportation for more information regarding these cross sections.

B-1: Four Lanes Divided with Wide Outside Lanes**B-2: Five Lanes with Wide Outside Lanes**

A widened outside lane is an effective way to accommodate bicyclists riding in the same lane with motor vehicles. With a wide outside lane, motorists do not have to change lanes to pass a bicyclist. The additional width in the outside lane also improves sight distance and provides more room for vehicles to turn onto the roadway. Therefore, on roadways with bicycle traffic, widening the outside lane can improve the capacity of that roadway. Also, by widening the outside lane by a few extra feet both motorists and bicyclists have more space in which to maneuver. This facility type is generally considered for use in urban, suburban, and occasionally rural conditions on roadways where there is a curb and gutter. Wide outside lanes can be applied to several different roadway cross sections.

B-3: Bicycle Lanes on Collector Streets

Bicycle lanes may be considered when it is desirable to delineate road space for preferential use by cyclists. Streets striped with bicycle lanes should be part of a connected bikeway system rather than being an isolated feature. Bicycle lanes function most effectively in mid-block situations by separating bicyclists from overtaking motor vehicles. Integrating bicyclists into complicated intersection traffic patterns can sometimes be problematic. Strip development areas, or roadways with a high number of commercial driveways, tend to be less suitable for bicycle lanes due to frequent and

unpredictable motorist turning movements across the path of straight-through cyclists. Striped bike lanes can be effective as a safety treatment, especially for less-experienced bicyclists. Two-lane residential/collector streets with lower traffic volume, low-posted speed limit, adequate roadway width for both bike lanes and motor vehicle travel lanes, and an absence of complicated intersections. A median-divided multi-lane roadway with lower traffic volumes and a low volume of right and left turning traffic would be a more appropriate location for bicycle lanes than a high traffic volume undivided multi-lane roadway with a continuous center turn lane. Most bicyclists will choose a route that combines direct access with lower traffic volumes. An origin and destination of less than 4 miles is desirable to generate usage on a facility.

B-4: Wide Paved Shoulders

On urban streets with curb and gutter, wide outside lanes and bicycle lanes are usually the preferred facilities. Shoulders for bicycle use are not typically provided on roadways with curb and gutter. On rural roadways where bicycle travel is common, such as roads in coastal resort areas, wide paved shoulders are highly desirable. On secondary roadways without curb and gutter where there are few commercial driveways and intersections with other roadways, many bicyclists prefer riding on wide, smoothly paved shoulders.

B-5: Multi-use Pathway

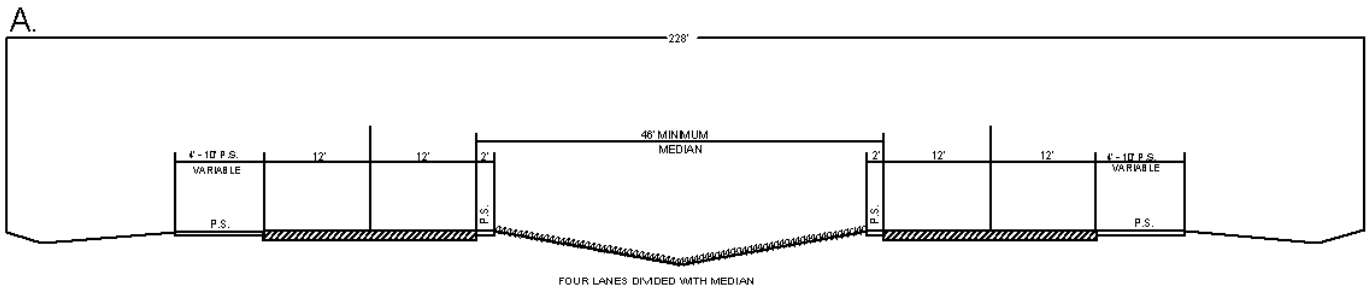
When properly located, multi-use pathway can be a safer type of facility for novice and child bicyclists because they do not have to share the path with motor vehicles. The design standards used for this cross section provides adequate width for two-directional use by both cyclists and pedestrians, provisions of good sight distance, avoidance of steep grades and tight curves, and minimal cross-flow by motor vehicles. A multi-use pathway can serve a variety of purposes, including recreation and transportation. This pathway should not be located immediately adjacent to a roadway because of safety considerations at intersections with driveways and roads. Sidewalks should never be used as a multi-use pathway.

General

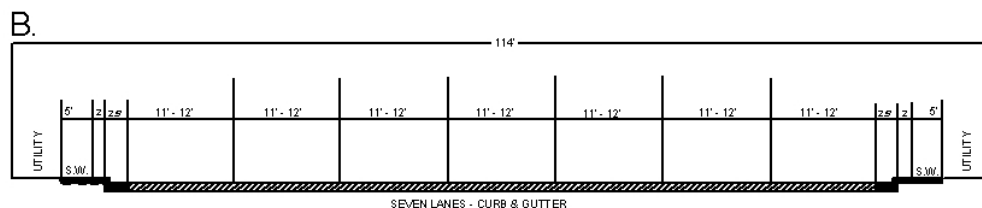
The urban curb and gutter cross sections all illustrate the sidewalk adjacent to the curb with a buffer such as a utility strip or landscaping between the sidewalk and the minimum right-of-way line. This permits adequate setbacks for the safety of the pedestrians while providing locations for utilities. If it is desired to move the sidewalk farther away from the street to provide additional separation for pedestrians or for aesthetic reasons, additional right-of-way must be provided to insure adequate setbacks for the pedestrian's safety was accomplished while providing locations for utilities.

The right-of-way shown for each typical cross section is the minimum amount required to contain the street, sidewalks, utilities, and drainage facilities. Cut and fill requirements may require either additional right-of-way or construction easements. Obtaining construction easements is becoming the more common practice for urban transportation construction.

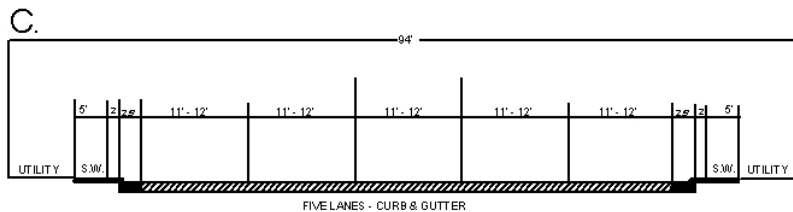
TYPICAL HIGHWAY CROSS SECTIONS



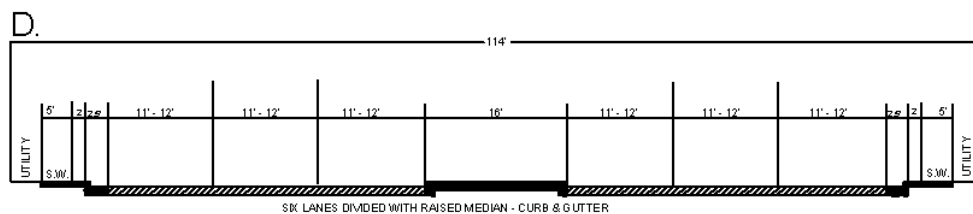
Freeway/Expressway



Other Major Thoroughfare

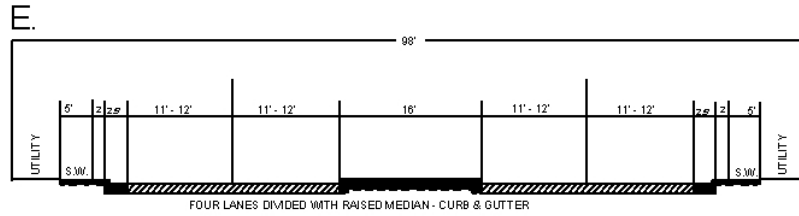


Other Major Thoroughfare

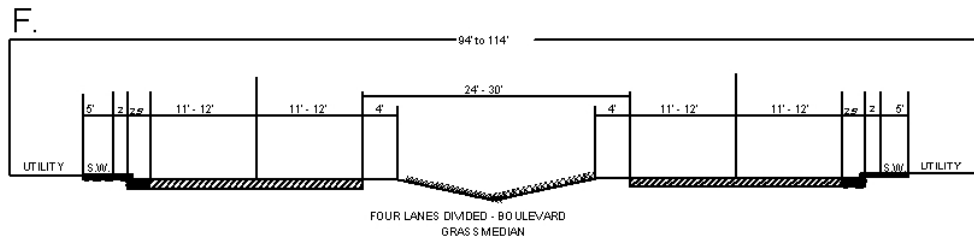


Expressway/Boulevard

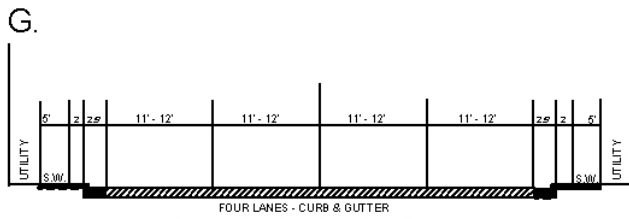
TYPICAL HIGHWAY CROSS SECTIONS



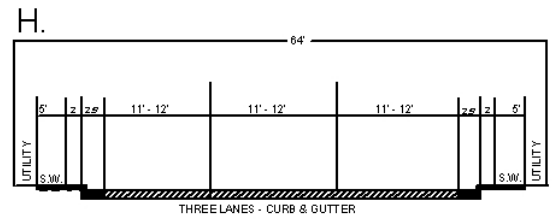
Expressway/Boulevard



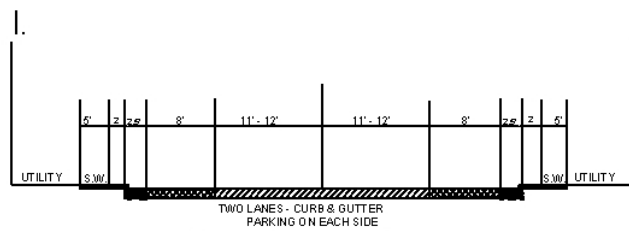
Expressway/Boulevard



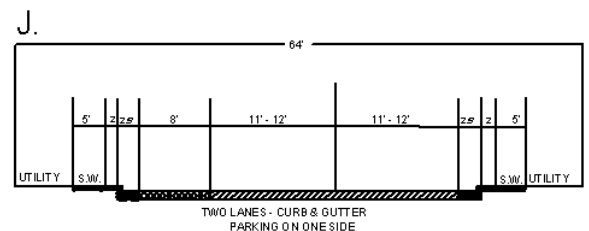
Other Major Thoroughfare



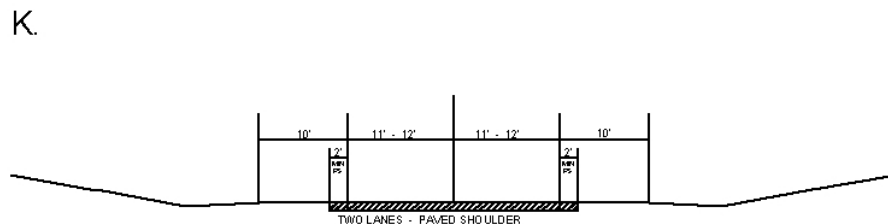
Minor Thoroughfare



Minor Thoroughfare



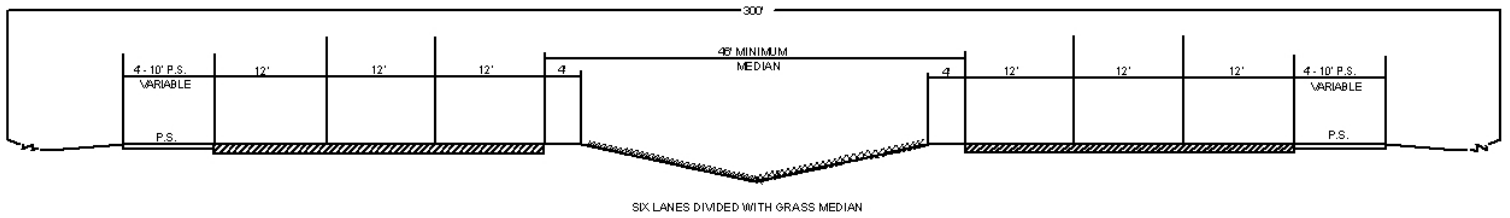
Minor Thoroughfare



Minor Thoroughfare or US/NC Routes

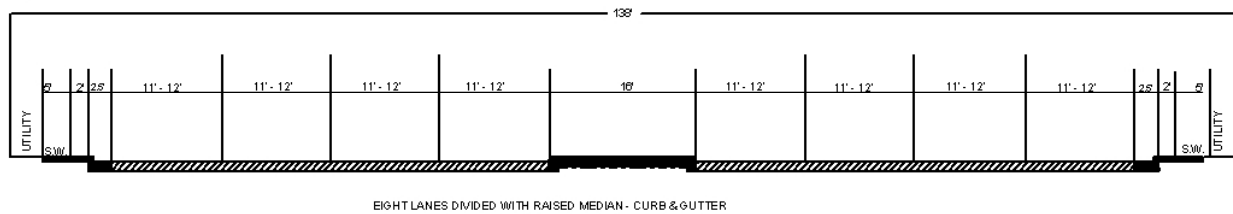
TYPICAL HIGHWAY CROSS SECTIONS

L.



Freeway/Expressway

M.



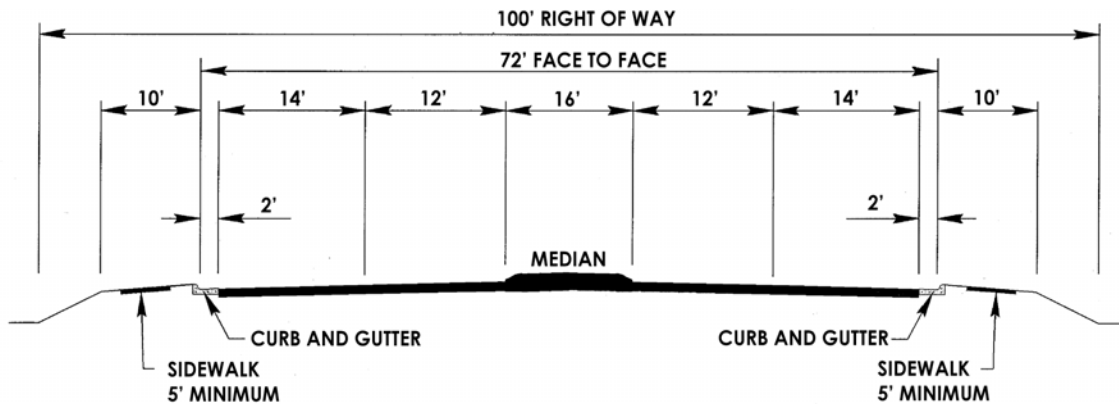
Expressway/Boulevard

Typical Bicycle Cross Sections

WIDE CURB LANES

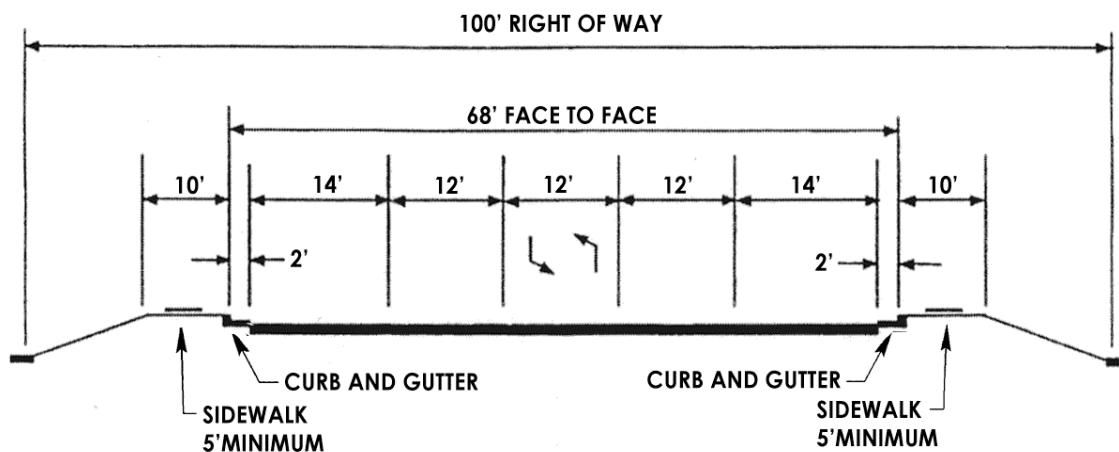
B-1 4-LANE MEDIAN DIVIDED TYPICAL SECTION

With Wide Outside Lanes



B-2 5-LANE TYPICAL SECTION

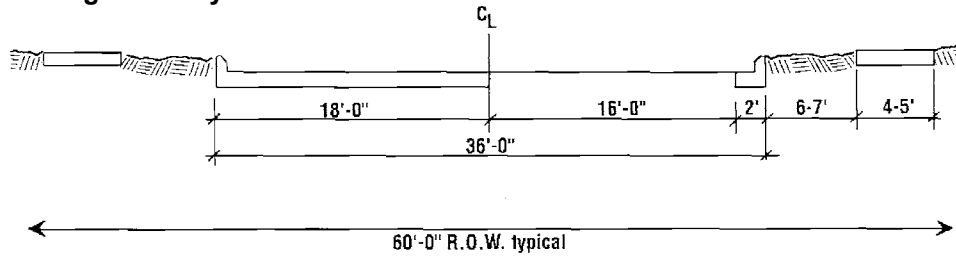
With Wide Outside Lanes



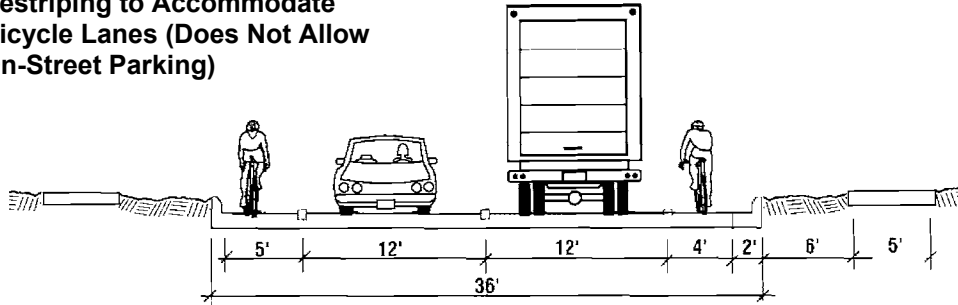
Typical Bicycle Cross Sections

B-3 BICYCLE LANES ON COLLECTOR STREETS

Existing Roadway



**Restriping to Accommodate
Bicycle Lanes (Does Not Allow
On-Street Parking)**

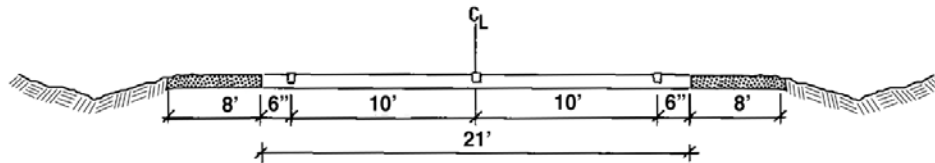


Typical Bicycle Cross Sections

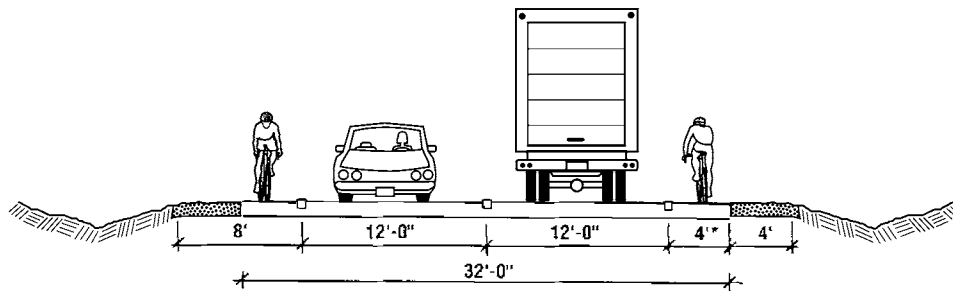
B-4

WIDE PAVED SHOULDERS

Existing Roadway



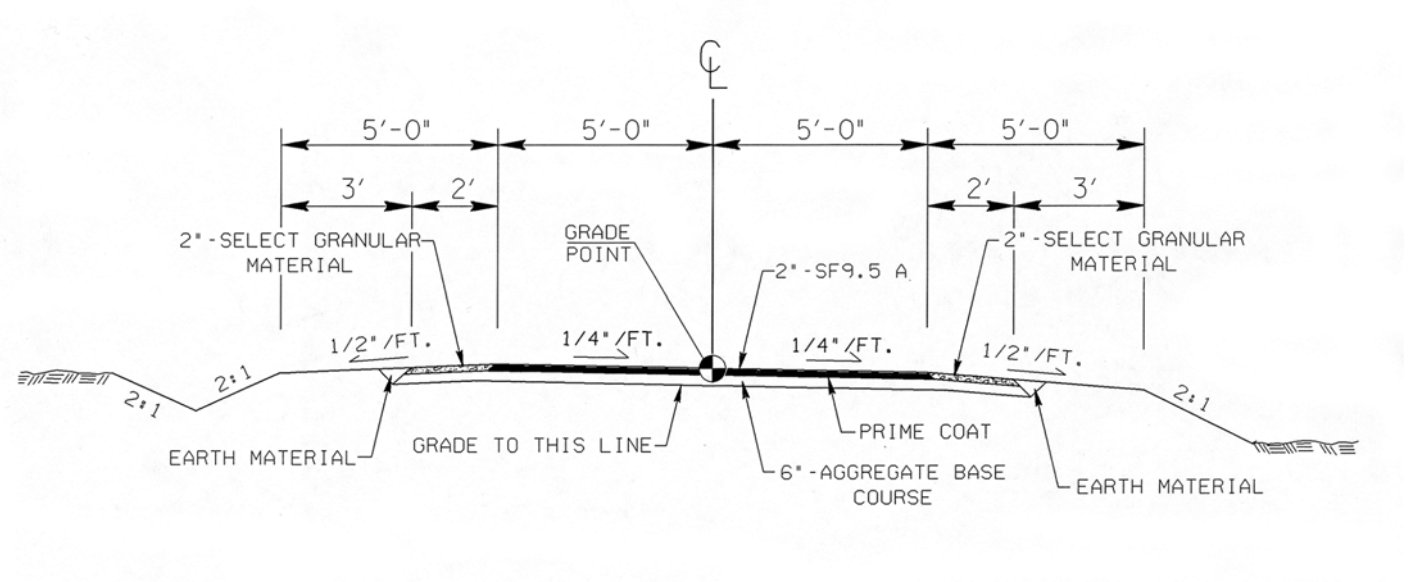
**Roadway Retrofitted with
4-Ft Paved Shoulders**



* If speeds are higher than 40 mph,
shoulder widths greater than 4' are
recommended.

Typical Bicycle Cross Sections

B-5 RECOMMENDED TYPICAL SECTION OF 10-FT ASPHALT PATHWAY
With 2-Ft Select Material Shoulder



APPENDIX E

Definitions of Environmental Status Codes

Definitions Of Environmental Status Codes: Natural Heritage Program List

<u>North Carolina Status</u>	<u>Descriptions of Plants*</u>
E Endangered	“Any species or higher taxon of plant whose continued existence as a viable component of the States flora is determined to be in jeopardy” (GS 19B 106: 202.12). (Endangered species may not be removed from the wild except when a permit is obtained for research, propagation, or rescue which will enhance the survival of the species).
T Threatened	“Any resident species of plant which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range” (GS 19B 106: 202.12). (Regulations are the same as for Endangered Species).
SC Special Concern	“Any species of plant in North Carolina which requires monitoring but which may be collected and sold under regulations adopted under the provisions of [the Plant Protection and Conservation Act]” (GS 19B 106:202.12). (Special Concern species which are not also listed as Endangered or Threatened may be collected from the wild and sold under specific regulations. Propagated material only of Special Concern species which are also listed as Endangered or Threatened may be traded or sold under specific regulations.)
C Candidate	Species which are very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease). These species are also either rare throughout their ranges (fewer than 100 populations total) or disjunct in North Carolina from a main range in a different part of the country or world. Also included are species which may have 20-50 populations in North Carolina, but fewer than 50 populations worldwide. These are species which have the preponderance of their distribution in North Carolina and whose fate depends largely on their conservation here. Also included are many species known to have once occurred in North Carolina but

* **Plant statuses** are determined by the Plant Conservation Program (NC Department of Agriculture) and the Natural Heritage Program (NC Department of Environment and Natural Resources). Endangered, Threatened, and Special Concern species are protected by state law (Plant Protection and Conservation Act, 1979). Candidate and Significantly Rare designations indicate rarity and the need for population monitoring and conservation action. Note that plants can have a double status, e.g., E-SC, indicates that while the plant is endangered, it is collected or sold under regulation.

with no known extant occurrences in the state (historical or extirpated species); if these species are relocated in the state, they are likely to be listed as Endangered or Threatened. If present land use trends continue, candidate species are likely to merit listing as Endangered or Threatened.

SR Significantly Rare

Species which are very rare in North Carolina, generally substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease). These species are generally more common somewhere else in their ranges, occurring in North Carolina peripherally to their main ranges, mostly in habitats which are unusual in North Carolina. Also included are some species with 20-100 populations in North Carolina, if they also have only 50-100 populations rangewide and are declining.

-L Limited

The range of the species is limited to North Carolina and adjacent states (endemic or near endemic). These are species which may have 20-50 populations in North Carolina, but fewer than 50 populations rangewide. The preponderance of their distribution is in North Carolina and their fate depends largely on conservation here. Also included are some species with 20-100 populations in North Carolina, if they also have only 50-100 populations rangewide and declining.

-T Throughout

These species are rare throughout their ranges (fewer than 100 populations total)

-D Disjunct

The species is disjunct to NC from a main range in a different part of the country or world.

-P Peripheral

The species is at the periphery of its range in NC. These species are generally more common somewhere else in their ranges, occurring in North Carolina peripherally to their main ranges, mostly in habitats which are unusual in North Carolina.

-O Other

The range of the species is sporadic or cannot be described by the other Significantly Rare categories

P_ Proposed

A species which has been formally proposed for listing as Endangered, Threatened, or Special Concern, but has not yet completed the legally mandated listing process.

<u>North Carolina Status</u>	<u>Description of Animals²</u>
E Endangered	"Any native or once-native species of wild animal whose continued existence as a viable component of the State's fauna is determined by the Wildlife Resources Commission to be in jeopardy or any species of wild animal determined to be an 'endangered species' pursuant to the Endangered Species Act." (Article 25 of Chapter 113 of the General Statutes; 1987).
T Threatened	"Any native or once-native species of wild animal which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, or one that is designated as a threatened species pursuant to the Endangered Species Act." (Article 25 of Chapter 113 of the General Statutes; 1987).
SC Special Concern	"Any species of wild animal native or once-native to North Carolina which is determined by the Wildlife Resources Commission to require monitoring but which may be taken under regulations adopted under the provisions of this Article." (Article 25 of Chapter 113 of the General Statutes; 1987).
SR Significantly Rare	Any species which has not been listed by the N.C. Wildlife Resources Commission as an Endangered, Threatened, or Special Concern species, but which exists in the state in small numbers and has been determined by the N.C. Natural Heritage Program to need monitoring. (This is a N.C. Natural Heritage Program designation.) Significantly Rare species include "peripheral" species, whereby North Carolina lies at the periphery of the species' range (such as Hermit Thrush). The designation also includes marine and estuarine fishes identified as "Vulnerable" by the N.C. State Museum of Biological Sciences (Ross et al., 1988, <u>Endangered, Threatened, and Rare Fauna of North Carolina. Part II. A Reevaluation of the Marine and Estuarine Fishes</u>).
EX Extirpated	A species which is no longer believed to occur in the state.
P_ Proposed	Species has been proposed by a Scientific Council as a status (Endangered, Threatened, Special Concern, Watch

² Animal statuses are determined by the Wildlife Resources Commission and the Natural Heritage Program. Endangered, Threatened, and Special Concern species of mammals, birds, reptiles, amphibians, freshwater fishes, and freshwater and terrestrial mollusks have legal protection status in North Carolina (Wildlife Resources Commission). The Significantly Rare designation indicates rarity and the need for population monitoring and conservation action.

List, or for De-listing) that is different from the current status, but the status has not yet been adopted by the Wildlife Resources Commission and by the General Assembly as law. In the lists of rare species in this book, these proposed statuses are listed in parentheses below the current status. Only those proposed statuses that are different from the current statuses are listed.

<u>Federal Status</u>	<u>Description</u>³
E Endangered	A taxon “which is in danger of extinction throughout all or a significant portion of its range” (Endangered Species Act, Section 3).
T Threatened	A taxon “which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range” (Endangered Species Act, Section 3).
EXN Endangered, nonessential experimental population.	The Endangered Species Act permits the reintroduction of endangered animals as "nonessential experimental" populations. Such populations, considered nonessential to the survival of the species, are managed with fewer restrictions than populations listed as endangered.
T Threatened (S/A) due to Similarity of Appearance.	The Endangered Species Act authorizes the treatment of a species (subspecies or population segment) as threatened even though it is not otherwise listed as threatened if: (a) The species so closely resembles in appearance a threatened species that enforcement personnel would have substantial difficulty in differentiating between the listed and unlisted species; (b) the effect of this substantial difficulty is an additional threat to a threatened species; and (c) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of the Act. The American Alligator has this designation due to similarity of appearance to other rare crocodilians. The Bog Turtle (southern population) has this designation due to similarity of appearance to Bog Turtles in the threatened northern population.
C Candidate	A taxon under consideration for which there is sufficient information to support listing. This category was formerly designated as a Candidate 1 (C1) species.

³ These statuses are designated by the US Fish and Wildlife Service. Federally listed Endangered and Threatened species are protected under the provisions of the Endangered Species Act of 1973, as amended through the 100th Congress. Unless otherwise noted, definitions are taken from the *Federal Register*, Vol. 56, No. 225, November 21, 1991 (50 CFR Part 17).

FSC	Federal “Species of Concern”	Formerly defined as a taxon under consideration for which there is insufficient information to support listing; formerly designated as a Candidate 2 (C2) species.
PE	Proposed Endangered	Species has been proposed for listing as endangered.
PD	Proposed De- listed	Species has been proposed for de-listing.

State Ranks

S1

Description

Critically imperiled in North Carolina because of extreme rarity or otherwise very vulnerable to extirpation in the state.

S2

Imperiled in North Carolina because of rarity or otherwise vulnerable to extirpation in the state.

S3

Rare or uncommon in North Carolina

S4

Apparently secure in North Carolina, with many occurrences.

S5

Demonstrably secure in North Carolina and essentially ineradicable under present conditions.

SA

Accidental or casual; one to several records for North Carolina, but the state is outside the normal range of the species.

SH

Of historical occurrence in North Carolina, perhaps not having been verified in the past 25 years, and suspected to be still extant in the state.

SR

Reported from North Carolina, but without persuasive documentation for either accepting or rejecting the report.

SX

Believed to be extirpated from North Carolina.

SU

Possibly in peril in North Carolina, but status uncertain; more information is needed.

S?

Unranked, or rank uncertain.

S_B

Rank of breeding population in the state. Used for migratory species only.

S_N

Rank of non-breeding population in the state. Used for migratory species only.

SZ_

Population is not of significant conservation concern;
applies to transitory, migratory species.

